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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,877	09/26/2003	Joze Potocnik	GRAT 20.602 (100717-00065)	4620
26304	7590	04/02/2004	EXAMINER	
KATTEN MUCHIN ZAVIS ROSENMAN 575 MADISON AVENUE NEW YORK, NY 10022-2585			MULLINS, BURTON S	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 04/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/672,877

Applicant(s)

POTOCNIK, JOZE

Examiner

Burton S. Mullins

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-8 is/are allowed.
- 6) ☒ Claim(s) 9,18,20 and 21 is/are rejected.
- 7) ☒ Claim(s) 10-17 and 19 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
- 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
- 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

2. Claims 1-2 and 21 are objected to because of the following informalities: In claim 1, line 21, insert -the- before “axial direction”. On the 7th from the last line, change “by” to –with-. In claim 2, insert -the- before “carbon” on line 3 and before “metal” on line 4. In claim 21, line 2, insert -the- before “axial”.

Claim Rejections - 35 USC § 112

3. Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Recitation “while forming undercuts” is indefinite. It is not clear if this refers to a method step, i.e., that cuts are formed at the same time that conductor segments are embedded in the support body; or if it an adjectival phrase describing the anchor portions.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 9, 18 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hockaday et al. (US 6,236,136) in view of Burger et al. (GB 2112215). Figs.11-12, c.6, lines 1-14 of Hockaday teach a drum or “barrel” commutator for an electrical machine comprising a barrel-shaped support body 220 made of insulating compression-molding material, a plurality of metal conductor segments (shell 204) with terminal lugs 208 disposed thereon, and an equal number of carbon segments 216 which are joined to the conductor segments in electrically conductive relationship (inherent), characterized by an annular, closed, substantially regular cylindrical surface (upper part of support body 220 in Fig.12) disposed adjacent to the terminal lugs 208 and comprising alternating zones of compression-molding material, i.e., support body 220 and “blanked” metal shell 204.

Hockaday do not teach a metallized inner surface that belongs to the carbon segments and is joined to the support body.

Burger teaches a motor commutator (Fig.4) including an injection-molded sleeve 54, annular carbon commutator 50, and annular portion 52 comprising copper and terminal tangs 56 (p.1, lines 101-126). Further, Burger teaches a metallized inner surface belonging to the

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carbon segments and joined to the support body comprising copper sintered layer 58 along the seam 55 between the annular surfaces 51 and 53. Alternatively, the layer may comprise a vapor-deposited layer, or one applied by means of a metallized bath (p.2, lines 1-9). The metal layer improves mounting of the commutator portions 50 and 52 since it enables the two pieces to be soldered together (p.2, lines 17-32 & 110-123).

It would have been obvious to one of ordinary skill to modify Hockaday and provide a metallized inner surface layer on the carbon segment per Burger since this would have facilitated connection of the commutator pieces to one another.

Regarding claim 18, Hockaday's lugs 208 are chamfered and face the conductor segments 204 (Fig.11).

Regarding claims 20-21, a shoulder (not numbered, lower part of support body 220) is shown in Hockaday, Fig.12. The shoulder covers the end faces of the carbon segments 216 and projects axially beyond the segments' end faces.

Allowable Subject Matter

6. Claims 1-8 are allowed. The prior art does not teach the claimed method of manufacture including, inter alia, the steps of "producing a metal conductor blank comprising a plurality of conductor segments, each two of which adjacent to one another are joined to one another via a bridge part, the distance from the radial inside faces of the bridge parts to the commutator axis corresponding substantially to the distance from the radial outside faces of the conductor segments to the commutator axis; ... removing the bridge parts with formation of an annular, closed, substantially regular cylindrical surface with alternating zones of compression-

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molding material and metal; forming the carbon segments by incising the carbon shell by axial cuts extending in radial direction as far as the support body and running in axial planes disposed between each two conductor segments, the annular, closed, substantially regular cylindrical surface with alternating zones of compression-molding material and metal being at least partly preserved.”

7. Claims 10, 13-17 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 10, the prior art, in particular Hockaday and Burger, do not teach completely embedded conductor segments, so that no metal of the conductor segments is exposed in the parting cuts forming the air gaps that insulate the carbon segments from one another.

Regarding claim 13, the prior art, in particular Hockaday and Burger, do not teach that the conductor segments are each provided with a thick-walled terminal region having a terminal lug, a thick-walled contact region that contacts the associated carbon segment, and a thin-walled transition region disposed between the terminal region and the contact region.

8. Claims 11-12 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. Regarding claim 11, the prior art, in particular Hockaday and Burger, do not teach that the carbon segments and the conductor segments are provided with anchor portions that extend radially inward and are embedded in the support body.

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Conclusion


9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

10. The information disclosure statement (IDS) submitted on September 26, 2003 has been considered by the examiner.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 571-272-2029.

The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 571-272-2034. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Burton S. Mullins
Primary Examiner
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